

What is claimed is:

1. A photoelectric sensor comprising: a light projecting section projecting detection medium light to a detection object region; and a light receiving section receiving reflecting light or transmitted light from the detection object region, the sections being in a single piece or in separate pieces, wherein

the light projecting section includes: a light source generating the detection medium light; and a light projecting lens for collimating or collecting the detection medium light from the light source to form a beam spot or a light collecting point in the detection object region; and deflection angle adjusting means capable of finely adjusting an optical axis deflection angle of the detection medium light projected to the detection object region from the light projecting section.

2. The photoelectric sensor according to claim 1, wherein

the deflection angle adjusting means is a transmissive medium, having a flat incidence plane for the detection medium light and a flat emission plane therefor, and changing an incidence angle of the detection medium light based on a change in position thereof relative to the detection medium light.

3. The photoelectric sensor according to claim 1,

wherein

the deflection angle adjustment means is a plane-parallel glass plate, interposed in an optical path between the light source and the light projecting lens, and supported rotatably about an axis orthogonal to the optical path.

4. The photoelectric sensor according to claim 3,  
wherein

the light source and the light projecting lens are fixed to an optical base in a single piece, the plane-parallel glass plate is rotatably supported by the optical base with a glass holder interposed therebetween, and a volume control operator for a rotation operation of the plane-parallel glass plate is provided to the glass holder.

5. The photoelectric sensor according to any of claims 1 to 4, further comprising

light beam adjusting means for performing distance adjustment of a light collecting point of light emitted from the light projecting lens.

6. A photoelectric sensor according to claim 1, further comprising: a sensor head case having a light projecting window in the front surface; and an option unit, capable of being mounted in a freely mountable/demountable manner at the front

surface of the sensor head case, and holding a light beam changing lens at a position aligned with the light projecting window with a lens holder interposed therebetween, wherein

the sensor head case contains: a light source generating detection object light; a light projecting lens collecting the detection medium light from the light source to emit the detection medium light from the light projecting window; and light beam adjusting means for performing distance adjustment of a light collecting point of light emitted from the light projecting window.

7. The photoelectric sensor according to claim 6, wherein

the light beam changing lens is a light beam changing lens capable of a uniform diffusion along the entire periphery.

8. The photoelectric sensor according to claim 6, wherein

the light beam changing lens is a plane diffusion type light beam changing lens.

9. The photoelectric sensor according to any of claims 6 to 8, wherein

the lens holder holding the light beam changing lens is rotatable about an optical axis.